

BookletChart™

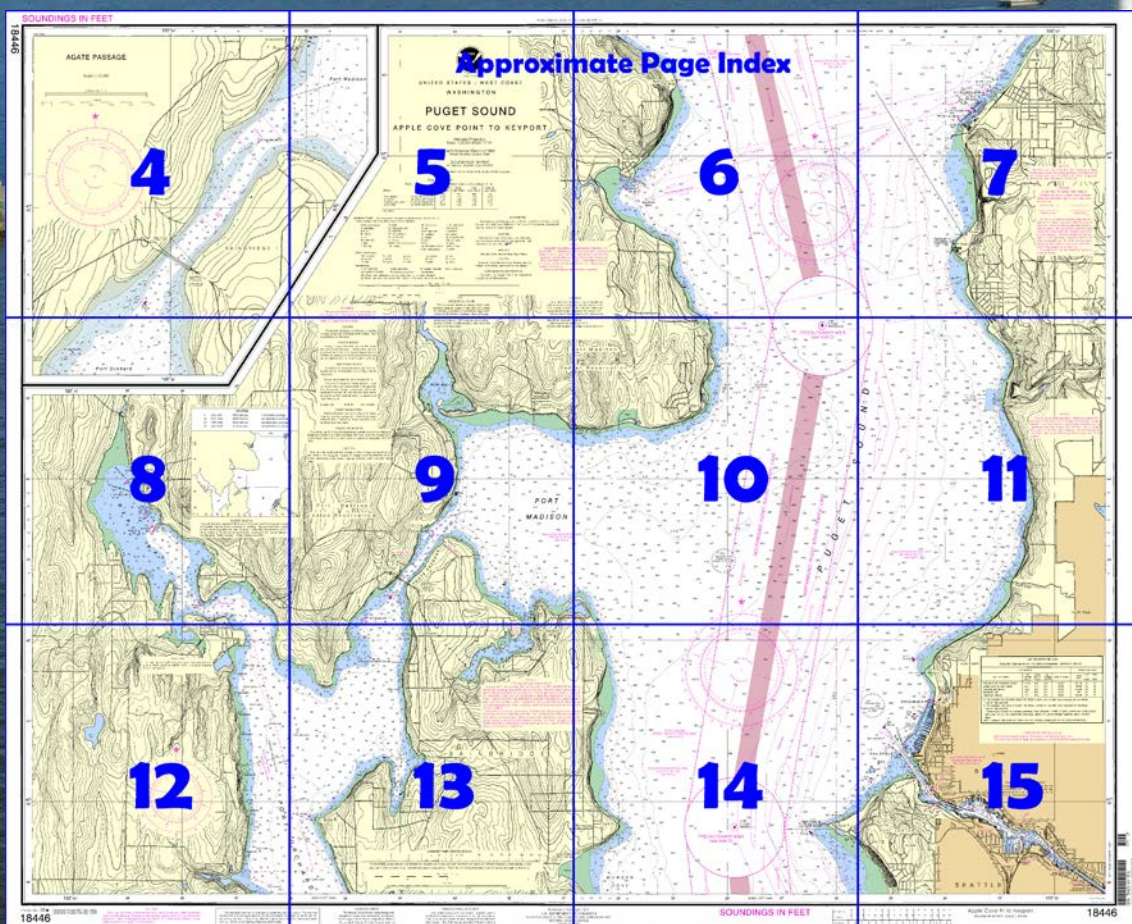


Puget Sound – Apple Cove Point to Keyport **NOAA Chart 18446**

A reduced-scale NOAA nautical chart for small boaters
When possible, use the full-size NOAA chart for navigation.



- Complete, reduced-scale nautical chart
- Print at home for free
- Convenient size
- Up-to-date with Notices to Mariners
- Compiled by NOAA's Office of Coast Survey, the nation's chartmaker



Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

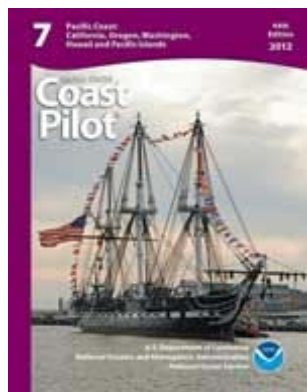
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at <http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=18446>



(Selected Excerpts from Coast Pilot)

Agate Passage is the N entrance to Port Orchard and connects it with Port Madison. The channel extends about 1 mile in a SW direction. The depth is about 20 feet. The passage is straight; the shores are wooded and fairly steep-to; the shoreline is rocky and fringed with kelp to Point Bolin. The currents have velocities up to 6 knots; the flood sets SW and the ebb NE. The passage is partially obstructed by a shoal near the middle of the N end with depths of 9 to 10 feet, and there are other depths of 14 to 18 feet almost in midchannel.

The N entrance is marked by a light on the W side of the channel opposite **Agate Point**; a lighted buoy marks the channel through the passage and a light marks a shoal NE of **Point Bolin**.

A fixed highway bridge, 0.7 mile S of Agate Point, has a clearance of 75 feet for a midwidth of 300 feet. Overhead power cables cross the passage on both sides of the bridge; least clearance is 96 feet.

Liberty Bay is a narrow inlet extending about 4 miles in a N direction from the NW part of Port Orchard. The SE half of the bay is narrow and tortuous. The shores are low and wooded; the shoreline is mostly sand and gravel. There are mud flats at the head of the bay and in the small bight on the S side of the bay. Mud is the predominating bottom characteristic. The current velocity is 0.8 knot N of Keyport, in the narrow entrance to the bay. Velocities exceeding 1 knot occur at times.

The Keyport Naval Undersea Warfare Center (NUWC) is on the W side of the entrance to Liberty Bay. A seaplane float extends 100 feet NW from the end of the pier and mariners are requested not to exceed 3 knots when passing it. Several buildings are prominent at the station. A **torpedo test area** extends off the shore between Brownsville and Keyport NUWC. Flashing red lights on Navy range vessels between Keyport and Brownsville and atop a building at the seaward end of the southern building at Keyport NUWC indicate torpedo firings, or that noise measurement tests are in progress, or that conditions are generally hazardous to mariners. When lights are flashing, mariners should not enter the test area. Mariners near the area should stop engines, or other equipment generating underwater noise, such as depth sounders, because some torpedoes are guided by noise and may be attracted to the boat noises. (See **334.1230**, chapter 2, for limits and regulations of the restricted area.)

Keyport is on the S side of the passage leading to Liberty Bay. A power cable with a clearance of 90 feet crosses the passage at Keyport. There are two piers with floats that can accommodate about 42 small craft. A store with gasoline pumps is about a half block from the Keyport launching ramp. A marine railway that can handle craft to 42 feet is available for repairs; a 7-ton hoist is also available. Engine and hull repairs and salvage and towing services are available at Keyport.

Poulsbo, a fishing and pleasure resort on the E shore at the head of Liberty Bay, is the principal town of the area. The small-craft harbor at Poulsbo, protected on the S and W sides by an angled timbered breakwater, can accommodate about 400 fishing boats and pleasure craft. The breakwater is well marked by private lights. Piers and floats are in the harbor with reported depths of 7 feet alongside. Supplies and services available at the harbor are: electricity, gasoline, diesel fuel, water, a pump-out facility and electrical/engine repairs. A float with the edges painted yellow is on the NE side of the harbor and has been reserved as a seaplane dock. A yacht club and marina are about 0.4 and 0.6 mile SSE of the small-craft harbor, respectively. Supplies of all types may be obtained in town.

Manzanita is a settlement on the W side of Bainbridge Island in a small cove about 2 miles S from Agate Passage. **Manzanita Bay**, S of the town, affords an excellent anchorage for small craft in 27 feet, mud bottom. There are several private wharves, buoys and floats in the bay. Caution is urged to avoid rows of submerged piling on each side of the bay, about midway in from the entrance.

Battle Point, a sandy spit on the E side of Port Orchard about 1.7 miles S of Point Bolin, marks the turn in the direction of the channel from SW to S. A light is off the end of the spit.

U.S. Coast Guard Rescue Coordination Center 24 hour Regional Contact for Emergencies

| | | |
|-------------|------------------------------|----------------|
| RCC Seattle | Commander | |
| | 13 th CG District | (206) 220-7001 |
| | Seattle, WA | |

Table of Selected Chart Notes

Corrected through NM Mar. 19/11
Corrected through LNM Mar. 08/11

HEIGHTS

Heights in feet above Mean High Water.

Mercator Projection
Scale 1:25,000 at Lat. 47°44'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Seattle, WA KHB-60 162.550 MHz

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION

BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

RACING BUOYS

Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:



Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus:

○ (Accurate location) ◌ (Approximate location)

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.651" southward and 4.480" westward to agree with this chart.

NOTE B

Mariners are cautioned that the Washington State Ferries may deviate from the published standard routes due to inclement weather, traffic conditions, navigational hazards or other emergency conditions.

CAUTION

Flashing red lights on Navy range vessels between Keyport and Brownsville and atop a building at the seaward end of the southern buildings at Keyport Naval Undersea Warfare Center indicate torpedo firings, or that noise measurement tests are in progress, or that conditions are generally hazardous to mariners.

NOTE C

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the Puget Sound area. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington or at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.

Refer to charted regulation section numbers.

CAUTION

Mariners are cautioned that a large number of logs and deadheads are adrift in the navigable waters of Oregon and Washington at all times, particularly after storms, spring freshets, and unusually high tides.

SOURCE DIAGRAM

The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

COLREGS. 80.1395 (see note A)

International Regulations for Preventing Collisions at Sea, 1972. The entire area of this chart falls seaward of the COLREGS Demarcation Line.

TIDAL INFORMATION

| PLACE | | Height referred to datum of soundings (MLLW) | | |
|----------------------|--------------------|--|-----------------|----------------|
| NAME | (LAT/LONG) | Mean Higher High Water | Mean High Water | Mean Low Water |
| Brownsville | (47°39'N/122°37'W) | feet | feet | feet |
| Poulsbo, Liberty Bay | (47°44'N/122°38'W) | 11.8 | 10.9 | 2.9 |
| Port Madison | (47°42'N/122°32'W) | 11.7 | 10.8 | 2.9 |
| Edmonds | (47°49'N/122°23'W) | 11.4 | 10.5 | 2.8 |
| | | 10.9 | 10.1 | 2.8 |

Dashes (---) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from <http://tidesandcurrents.noaa.gov>. (Jan 2011)

LAKE WASHINGTON SHIP CANAL

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO NOV 2010

| * SEE FOOTNOTE | | | | | PROJECT DIMENSIONS | | |
|------------------------------|----------------------|------------------------|-----------------------|----------------|--------------------|------------------|----------------|
| NAME OF CHANNEL | LEFT OUTSIDE QUARTER | MIDDLE HALF OF CHANNEL | RIGHT OUTSIDE QUARTER | DATE OF SURVEY | WIDTH (FEET) | LENGTH * (MILES) | DEPTH * (FEET) |
| SHILSHOLE BAY ENTRANCE RANGE | A 15.3 | 25.9 | B 2.7 | 8,9-96 | 300-100 | 1.0 | 34 |
| LARGE LOCK TO LAKE UNION | 21.0 | 26.0 | 21.0 | 11-10 | 100-300 | 2.2 | 30 |
| PORTAGE BAY REACH | 23.0 | 25.0 | 21.0 | 11-10 | 350-200 | 0.8 | 30 |
| MONTLAKE CUT | 17.0 | 30.0 | 25.0 | 11-10 | 100 | 0.4 | 30 |
| UNION BAY REACH | 28.0 | 30.0 | 18.0 | 11-10 | 100-200 | 0.9 | 30 |

A. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 31.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.

B. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 20.8 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.

* CONTROLLING DEPTHS IN CHANNELS ENTERING FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER BELOW THE LOCKS AND AT LOW REGULATED LAKE LEVEL ABOVE THE LOCKS. PROJECT LENGTHS ARE IN NAUTICAL MILES.

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

SOUNDINGS IN FEET

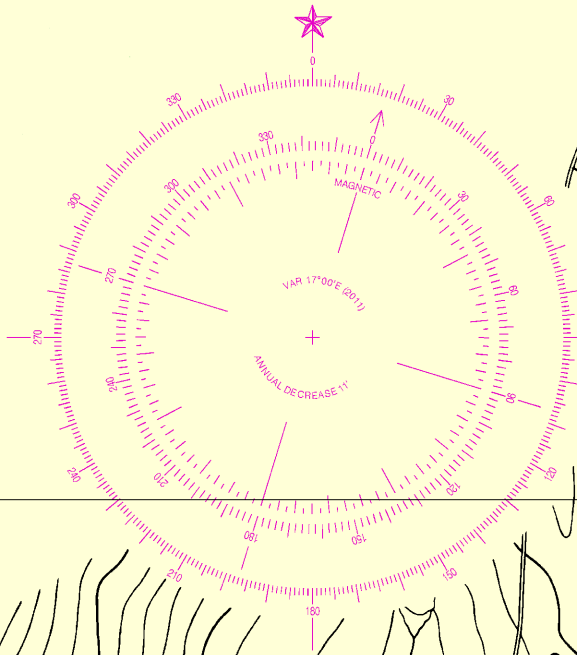
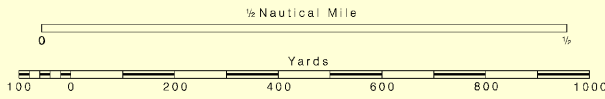
18446

KAPP 1708

122°34'

AGATE PASSAGE

Scale 1:10,000



47°
43'

50'

40'

30'

20'

Sandy Hook

Fish Copen

Joins page 8

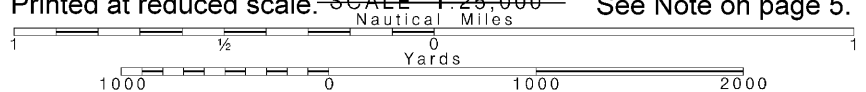
BAINBRIDGE I

Squamish

Agate P

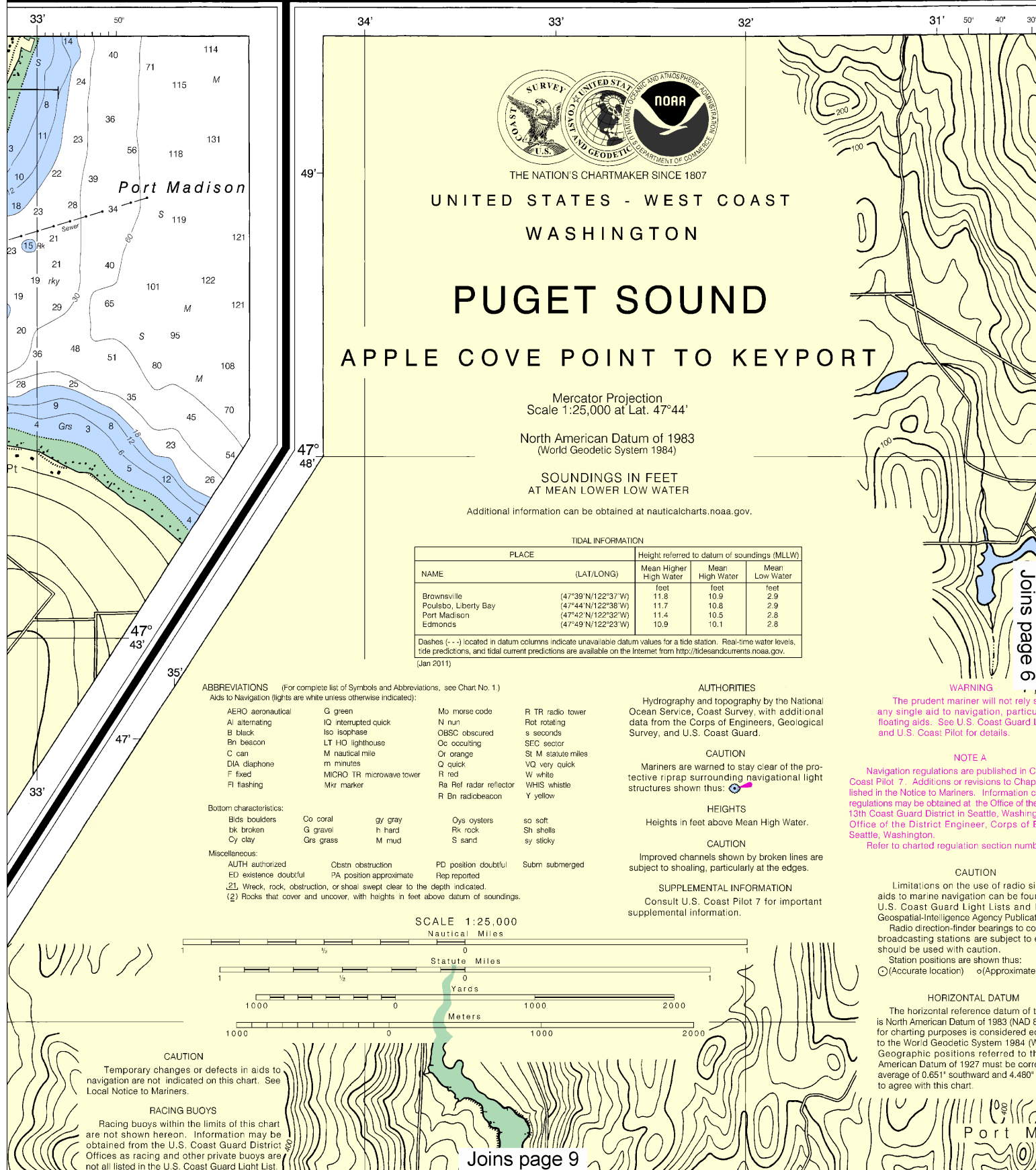
Printed at reduced scale. SCALE 1:25,000

See Note on page 5.

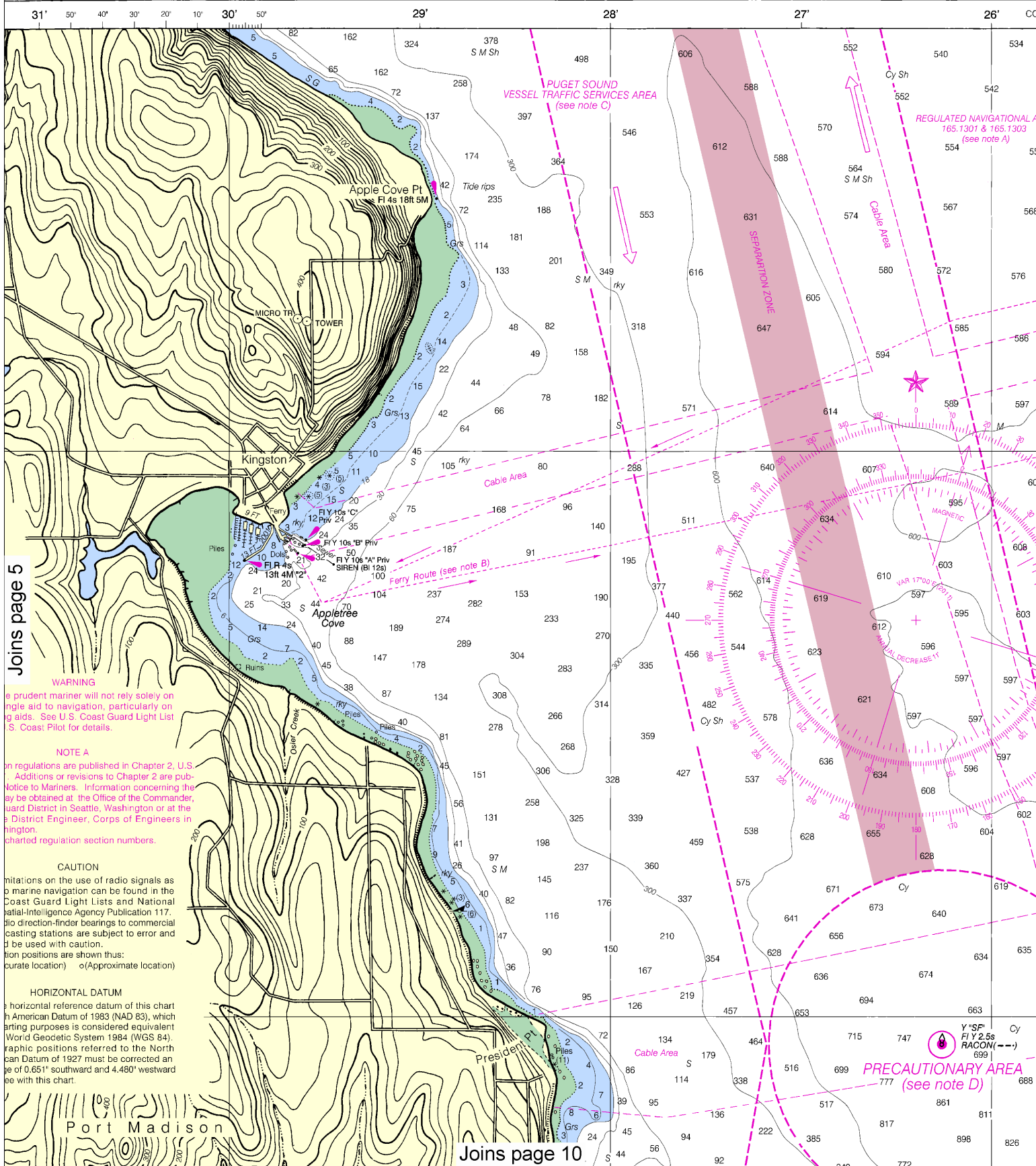


4

Note: Chart grid lines are aligned with true north.



This BookletChart was reduced to 75% of the original chart scale. The new scale is 1:33333. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.

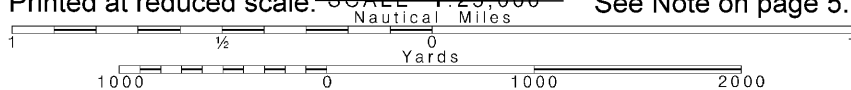


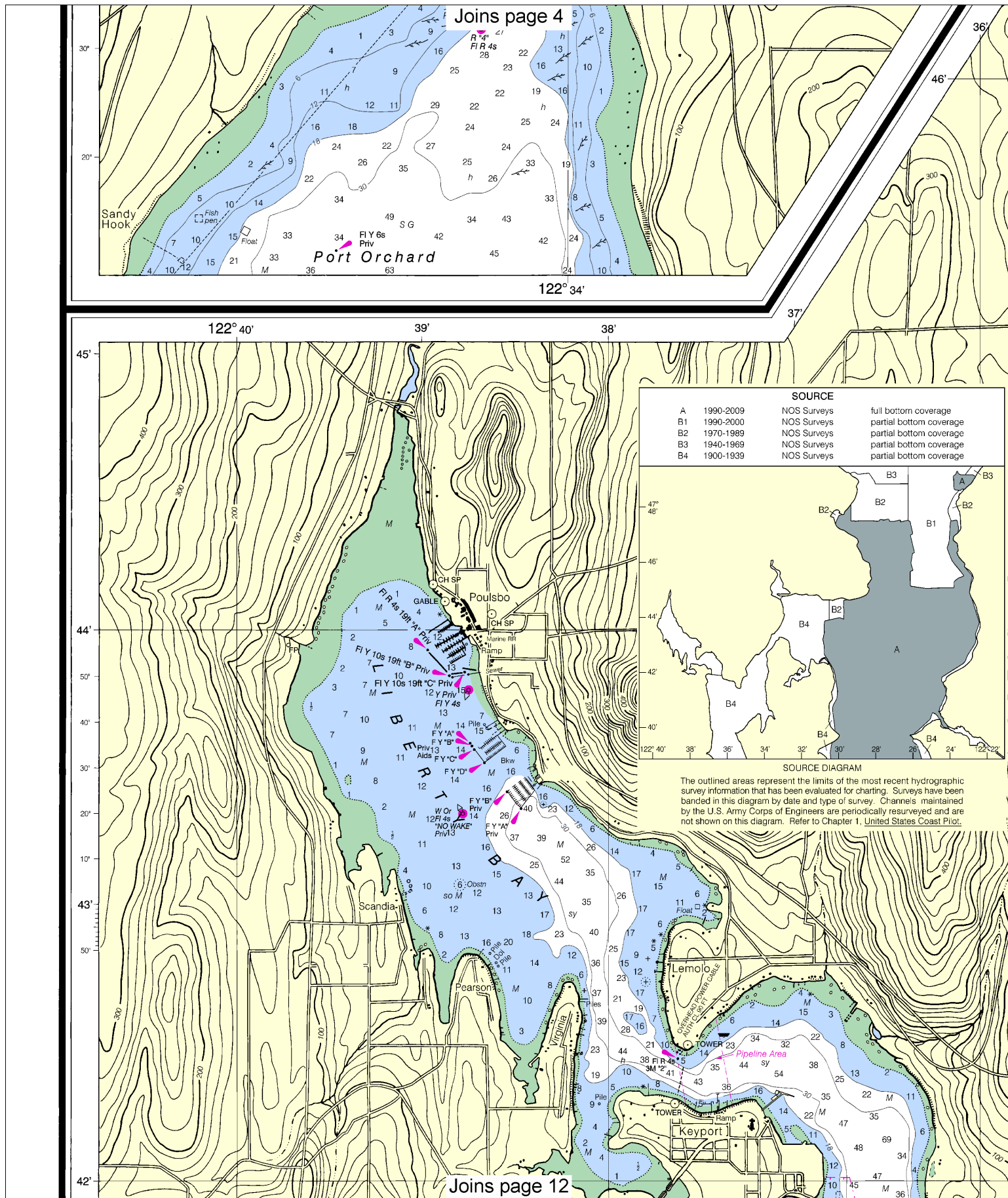
6

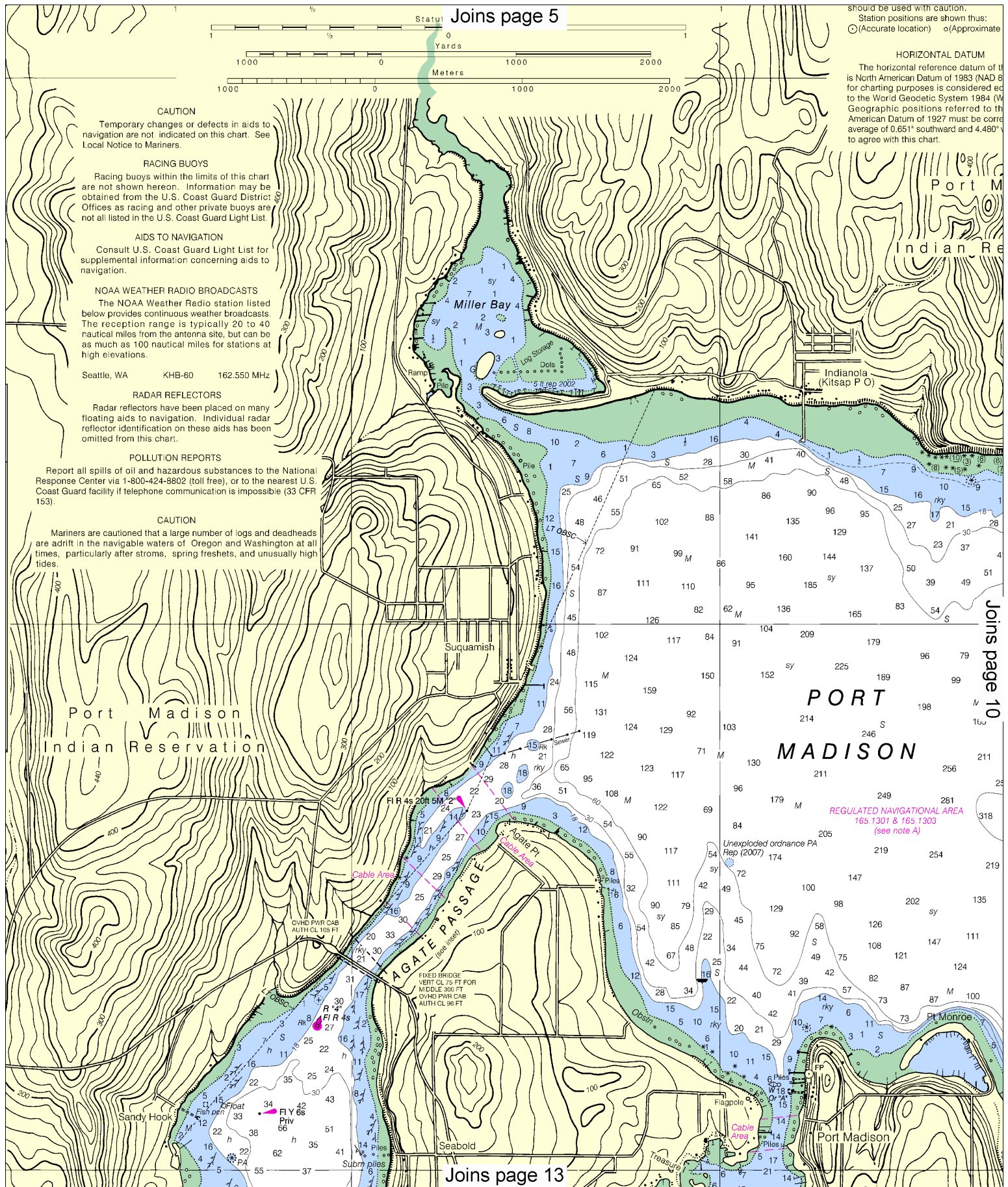
Note: Chart grid lines are aligned with true north.

Printed at reduced scale. SCALE 1:25,000

See Note on page 5.







Joins page 5

should be used with caution.
Station positions are shown thus:
○ (Accurate location) ○ (Approximate)

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83). For charting purposes is considered equal to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the American Datum of 1927 must be corrected by an average of 0.65" southward and 4.480" eastward to agree with this chart.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

NOAA WEATHER RADIO BROADCASTS
The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Seattle, WA KHB-60 162.550 MHz

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

CAUTION
Mariners are cautioned that a large number of logs and deadheads are adrift in the navigable waters of Oregon and Washington at all times, particularly after storms, spring freshets, and unusually high tides.

**PORT
MADISON**

REGULATED NAVIGATIONAL AREA
165.1301 & 165.1303
(see note A)

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HORIZONTAL DATUM
The horizontal reference datum of this chart is the American Datum of 1983 (NAD 83), which for cartographic purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.651" southward and 4.480" westward with this chart.

Port Madison
Indian Reservation

ON 6 S Joins page 9 83

ON

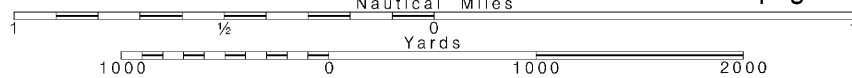
10

Note: Chart grid lines are aligned with true north.

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Printed at reduced scale. ~~SCALE 1:25,000~~

See Note on page 5.



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42°

41°

47°

39°

122° 40'

39'

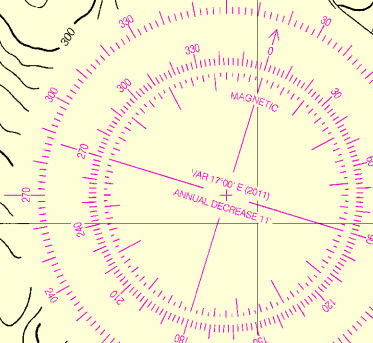
38'

37'

36'

CAUTION

Flashing red lights on Navy range vessels between Keyport and Brownsville and atop a building at the seaward end of the southern buildings at Keyport Naval Undersea Warfare Center indicate torpedo firings, or that noise measurement tests are in progress, or that conditions are generally hazardous to mariners.



18th Ed., Mar. / 11 ■ Corrected through NM Mar. 19/11
Corrected through LNM Mar. 08/11

18446

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

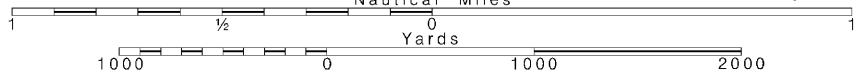
This nautical chart has been designed to promote safe navigation. Ocean Service encourages users to submit corrections, additions, or improvements to the Chief, Marine Chart Division (N/CS2), Naval Service, NOAA, Silver Spring, Maryland 20910-3282.

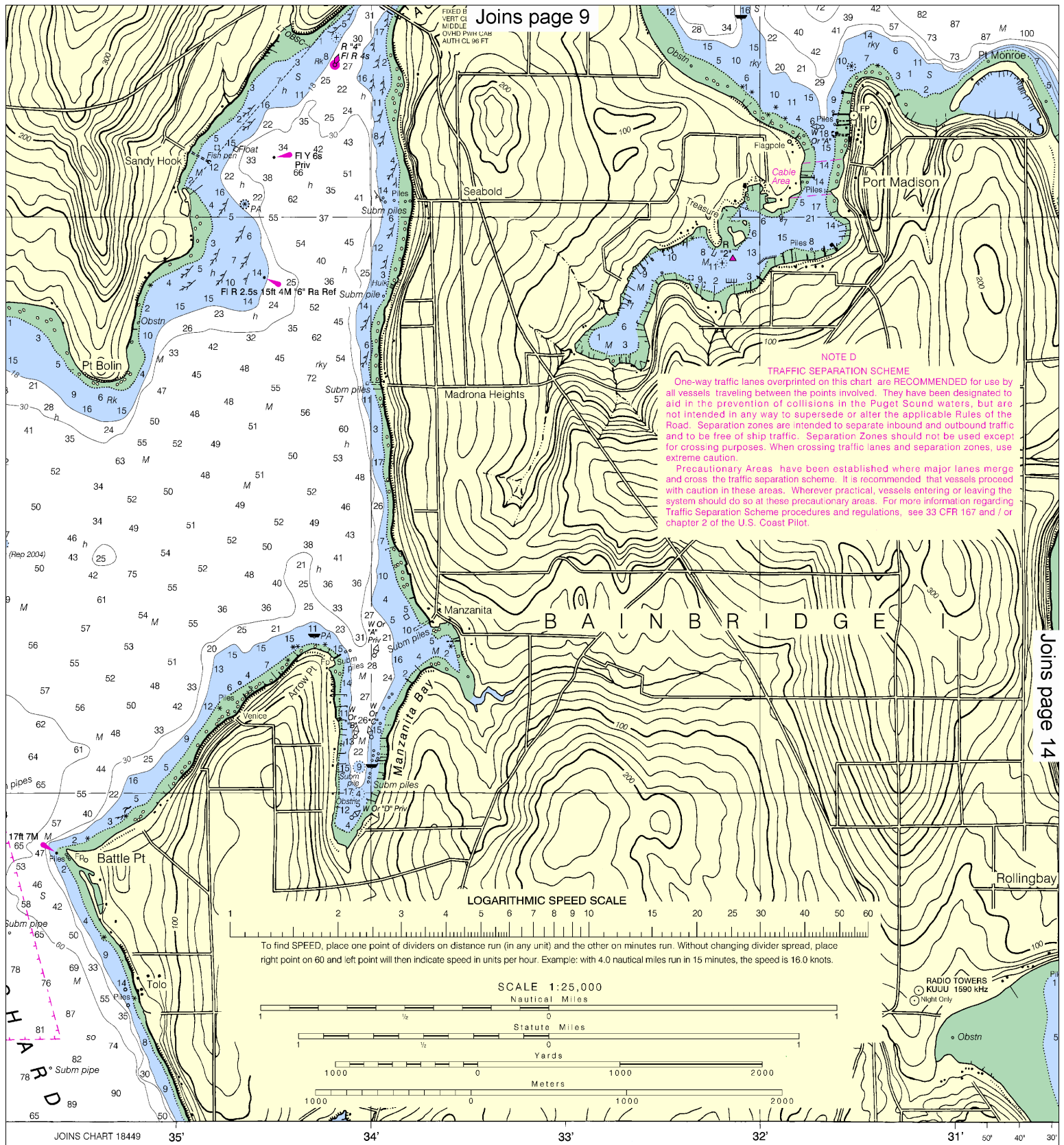
12

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. SCALE 1:25,000

See Note on page 5.





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Joins page 14

NOTE D

TRAFFIC SEPARATION SCHEME

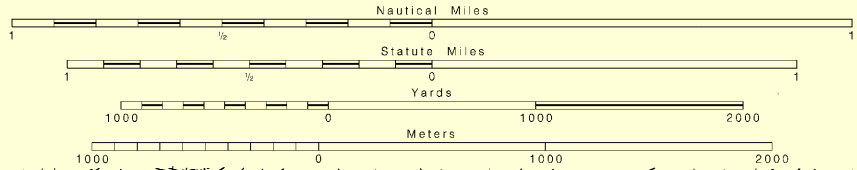
One-way traffic lanes overprinted on this chart are RECOMMENDED for use by all vessels traveling between the points involved. They have been designated to aid in the prevention of collisions in the Puget Sound waters, but are not intended in any way to supersede or alter the applicable Rules of the Road. Separation zones are intended to separate inbound and outbound traffic and to be free of ship traffic. Separation Zones should not be used except for crossing purposes. When crossing traffic lanes and separation zones, use extreme caution.

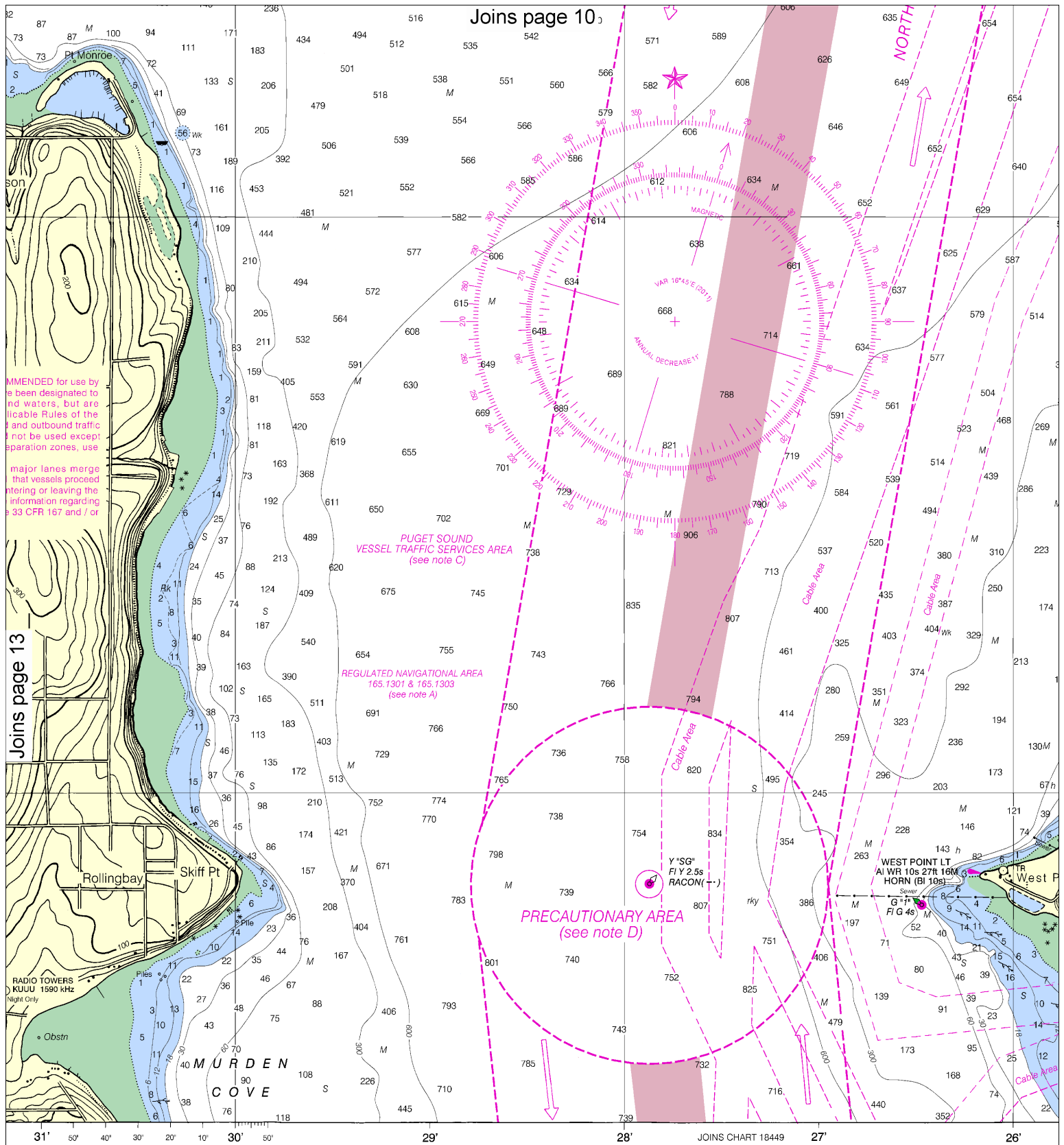
Precautionary Areas have been established where major lanes merge and cross the traffic separation scheme. It is recommended that vessels proceed with caution in these areas. Wherever practical, vessels entering or leaving the system should do so at these precautionary areas. For more information regarding Traffic Separation Scheme procedures and regulations, see 33 CFR 167 and / or chapter 2 of the U.S. Coast Pilot.

LOGARITHMIC SPEED SCALE

To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

SCALE 1:25,000





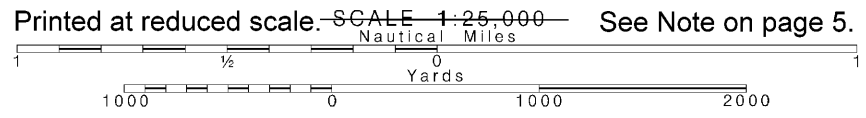
Published at Washington, D.C.
 DEPARTMENT OF COMMERCE
 COAST AND ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE
 COAST SURVEY

SOUNDINGS IN FEET

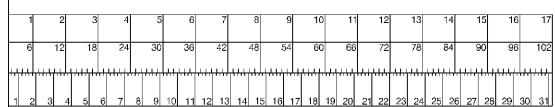
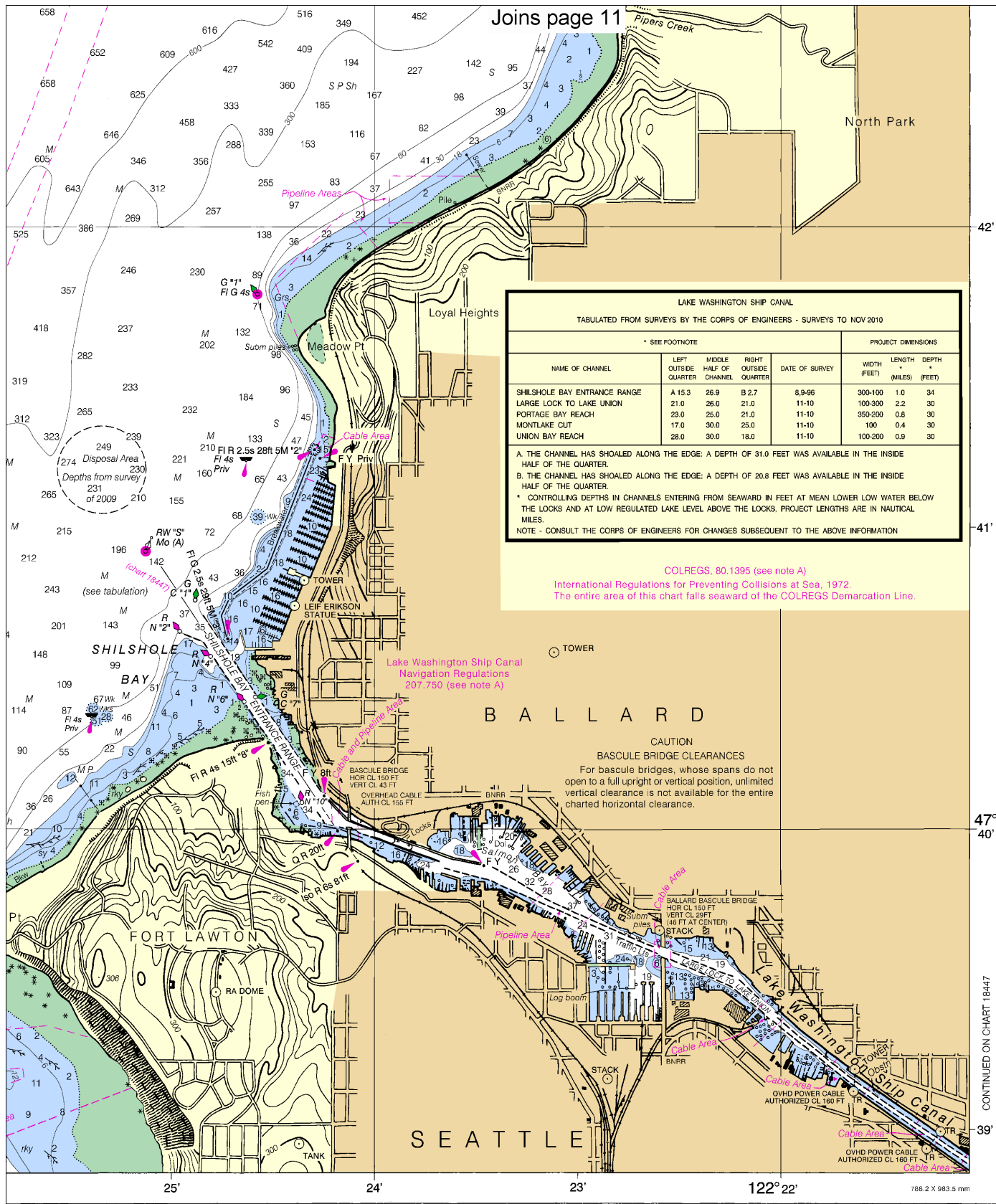
| FATHOMS | FEET | METERS |
|---------|------|--------|
| 1 | 6 | 1.1 |
| 2 | 12 | 2.2 |
| 3 | 18 | 3.3 |
| 4 | 24 | 4.4 |
| 5 | 30 | 5.5 |
| 6 | 36 | 6.6 |
| 7 | 42 | 7.7 |
| 8 | 48 | 8.8 |
| 9 | 54 | 9.9 |
| 10 | 60 | 11.0 |

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Note: Chart grid lines are aligned with true north.



See Note on page 5.



Apple Cove Pt to Keyport
SOUNDINGS IN FEET - SCALE 1:25,000

18446

CONTINUED ON CHART 18447
 NSN 7642014011510
 NGA REFERENCE NO. 18AHA18446



VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.

Channel 9 – Communications between boats and ship-to-coast.

Channel 13 – Navigation purposes at bridges, locks, and harbors.

Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other

vessels. Contact the other vessel, agree to another channel, and then switch.

Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.

Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!



NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

<http://www.nws.noaa.gov/nwr/>

Quick References

| | | |
|---|---|---|
| Nautical chart related products and information | — | http://www.nauticalcharts.noaa.gov |
| Online chart viewer | — | http://www.nauticalcharts.noaa.gov/mcd/NOAAChartViewer.html |
| Report a chart discrepancy | — | http://ocsddata.ncd.noaa.gov/idrs/discrepancy.aspx |
| Chart and chart related inquiries and comments | — | http://ocsddata.ncd.noaa.gov/idrs/inquiry.aspx?frompage=ContactUs |
| Chart updates (LNM and NM corrections) | — | http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html |
| Coast Pilot online | — | http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm |
| Tides and Currents | — | http://tidesandcurrents.noaa.gov |
| Marine Forecasts | — | http://www.nws.noaa.gov/om/marine/home.htm |
| National Data Buoy Center | — | http://www.ndbc.noaa.gov/ |
| NowCoast web portal for coastal conditions | — | http://www.nowcoast.noaa.gov/ |
| National Weather Service | — | http://www.weather.gov/ |
| National Hurricane Center | — | http://www.nhc.noaa.gov/ |
| Pacific Tsunami Warning Center | — | http://ptwc.weather.gov/ |
| Contact Us | — | http://www.nauticalcharts.noaa.gov/staff/contact.htm |



— For the latest news from Coast Survey, follow @nauticalcharts



This Booklet chart has been designed for duplex printing (printed on front and back of one sheet). If a duplex option is not available on your printer, you may print each sheet and arrange them back-to-back to allow for the proper layout when viewing.

NOAA's Office of Coast Survey



The Nation's Chartmaker